

Appendix D

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NARUS Semantic Traffic Analyzers

NARUS Semantic Traffic Analyzers are the first application aware data collection appliances designed to meet the rigorous standards of the service provider environment. Available in two form factors coupled with carrier-class performance ensures revenue-grade usage data collection from even the most advanced networks in real-time.

HIGHLIGHTS

Complete visibility to application usage information

Non-intrusive data capture with no impact on network performance

Support for a broad range of IP network topologies

High data integrity, no data loss, and financial-grade reliability

Optimal price-performance with carrier-class availability

Flexible, Non-Intrusive Data Collection

NARUS Semantic Traffic Analyzers are non-intrusive devices that collect and process network data without introducing any latency and with minimal impact on network throughput.

Analyzers connect to a network through external taps enabling easy installation and removal.

Real-Time Semantic Analysis

Using the NARUS Semantic Traffic Analysis™ (STA) technology, NARUS Analyzers continuously monitor and analyze user sessions across all seven layers of the OSI model. NARUS Analyzers provide detailed information about application-level context and content in real-time. Application-level visibility combined with robust real-time data delivery is crucial for business-critical applications such as billing, decision support, customer intelligence, churn management, etc.

Carrier-class Availability,

Financial-grade Performance

As the complexity of IP networks and services grows, IP service providers are demanding robust, non-stop operation of their business infrastructure. NARUS Analyzers are designed from the ground up for operation in carrier-class environments. Each Analyzer has built in reliability features such as redundant sub-systems, hot-swappable units and transparent sub-system failover and caching to ensure no single point of failure. NARUS Analyzers can be easily scaled to collect and process large volumes of traffic with no degradation in performance.



NARUS Analyzers:
Model 6100 and 6400


NARUS™

Multiple Network Topology and Interface Support

NARUS Analyzers enable monitoring of virtually all network topologies and links. Analyzers are designed to service a broad range of densities including single-port Ethernet, Fast Ethernet and high-speed Gigabit Ethernet. Wide area network (WAN) support includes Analyzers for Packet-over-SONET and ATM trunks and uplinks. Analyzers are installed at major traffic collection points within a network, typically at primary points of presence. NARUS Analyzers connect to the network using port mirroring, copper taps, or by using fiber-optic taps.

Security

NARUS Analyzers incorporate comprehensive network security features to allow secure communication between system components. Support for various standards of secure communication such as, SSH and IPSec is built into each Analyzer. Multiple levels of access are provided to prevent unauthorized access to sensitive network data. Access to Analyzer services is controlled by login identification and password-enabled authentication and authorization.

Standards Compliance

All NARUS Analyzers conform to industry standards and are continually tested to ensure the broadest range of interoperability. Standards supported include IPDR, SNMP v2, MIB-II. As a result of this standards-based framework, data from NARUS Analyzers can be leveraged by multiple Internet business infrastructure applications to take full advantage of detailed semantic information about user sessions and the applications and services used therein.

Advanced System Management

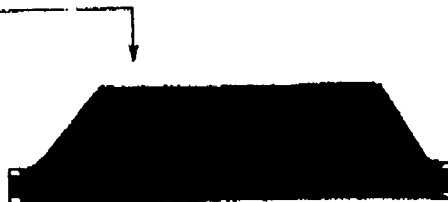
NARUS Analyzers support an extensive set of integrated tools that simplify configuration and management in large distributed networks. Using the NARUS Management System, network administrators can remotely control, configure, and monitor the Analyzer. NARUS Analyzers also support SNMP v2 MIB, to enable alerting, monitoring of health and performance via third-party management applications. NARUS Analyzers are configured using an out-of-band Ethernet management port for access by network management tools. This port can connect to either the production network or a separate management network, allowing the network manager to control access to management data and limit the impact on the production network. Access to Analyzer services is controlled by NARUS Management System via password-enabled authentication and authorization.

NARUS Analyzers at a Glance

The NARUS Analyzers provide a broad selection of computing options including performance, data storage, availability, rack size and cost requirements to suit your data collection needs. Two form factors support a wide array of network interface configurations, including LAN (Ethernet, Fast-Ethernet and High-Speed Gigabit Ethernet) and WAN (OC-3 and OC-12 on Packet-Over-SONET and ATM) interfaces.

Model 6100

NARUS Analyzer Model 6100 is the entry-level product, optimizing size, performance, and cost in a compact, reliable subsystem. With an Intel™ Pentium III processor and 512 MB of memory in a 1U form factor, the 6100 delivers high performance with minimal rack space. Available with a Port 100Base-T Ethernet link or a full duplex POS OC-3 interface, Model 6100 is an ideal solution for space-conscious service provider environments.



Model 6400

The NARUS Analyzer Model 6400 is the high end of the product line, providing the highest performance and availability in an expandable configuration. With dual Intel Pentium III processors and 2GB memory in a 4U form factor, Model 6400 can support up to 8 100base_T Ethernet links, a full duplex Gigabit Ethernet link, 2 full duplex ATM OC-3 or ATM OC-12 links, or 4 full duplex POS OC-3 or 2 full duplex POS OC-12 links, or up to eight 100Base-T Ethernet links. Model 6400 provides very high-reliability and availability features such as hot-swappable sub-systems, multiple redundant power supply, disks (RAID), fans, and network interface for monitoring.



SPECIFICATIONS

CONNECTIVITY OPTIONS		Model 6100	Model 6400
10/100 Ethernet (1 ports per card)		1 Link	N/A
10/100 Ethernet (4 ports per card)		4 Links	8 Links
Gigabit Ethernet* (1 port per card)		Not Available	1 Full Duplex Link 1 Full Duplex for Redundancy
POS OC-3* (2 ports per card)		1 Full Duplex Link	4 Full Duplex Links
POS OC-12* (1 port per card)		Not Available	2 Full Duplex Links
ATM OC-3* (1 port per card)		Not Available	2 Full Duplex Links
ATM OC-12* (1 port per card)		Not Available	2 Full Duplex Links
		*Designed to be used in a multimode network configuration	
STANDARD FEATURES			
Rack Size		1U	4U
Processor		Single Pentium III	Dual Pentium III
Memory		512 MB	2GB
Storage		IDE CD-ROM IDE HDD	IDE CD-ROM SCSI HDD (RAID)
Dimensions		19"(W) 18.6"(D) 1.75"(H)	19"(W) 26"(D) 7"(H)
Weight		23 lbs	72 lbs
Power Requirements		110V/240V 50-60Hz 6A Max. @ 115V 3A Max. @ 230V	110V/240V 50-60Hz 10A Max. @ 115V 5A Max. @ 230V
Hot-Swappable		None	Fans (3), Power Supply (3), Drives (4)
Management Interfaces		Ethernet (10/100Base-T), RS-232 (standard) Gigabit Ethernet (optional for 6400 only)	
TELESCOPING SLIDES			
24" Rack Mount Rail		Chassis Trak Part #SRAE-24T	Chassis Trak Part #SRAE-24W
Extension Set		Chassis Trak Part #SRAE-7T	Chassis Trak Part #SRAE-7W
RECOMMENDED TAPS			
10/100 Ethernet		Full Duplex Tap Splitter for Fast Ethernet (NetOptics Part # NET-96135)	
Gigabit Ethernet (SX)		Single Fiber Tap Module, Multi-Mode 70/30 Split Ratio (NetOptics Part #96042-G-30) & Station Tap, 1U high, Multi-Mode 70/30 Split Ratio (NetOptics Part #96133-G-30)	
ATM/POS		Single Fiber Tap Module, Multi-Mode 70/30 Split Ratio (NetOptics Part #96042-30) & Station Tap, 1U high, Multi-Mode 70/30 Split Ratio (NetOptics Part #96133-30)	
OPERATING ENVIRONMENT		Temperature: 0-40°C; Humidity: 8-85%; Shock: 2.5G @ 15-20ms; Vibration: .35G	
REGULATORY COMPLIANCE		Designed to meet FCC Class A, UL/cUL 6950, CE and TUV	

About NARUS

Based in Palo Alto, California, NARUS is the first and only company formed for the sole purpose of developing and marketing complete Internet Business Infrastructure (IBI) solutions. NARUS solutions give IP service providers the flexibility to implement new services and business models profitably, and at will.

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